

REMARKS / DISCUSSION OF ISSUES

The present amendment is submitted in response to the Office Action mailed August 12, 2009. Claims 1 and 5-12 remain in this application. Claim 1 has been amended. Claims 2-4 have been cancelled without prejudice or disclaimer. In view of the remarks to follow and amendments above, reconsideration and allowance of this application are respectfully requested.

The Invention

The invention provides an improved disc centering apparatus for centering an information medium on a turntable, the apparatus in which centering performance at high speeds is improved. It should be understood that centering performance is improved via a locking mechanism (i.e., a movable locking member) that is cooperatively arranged relative to one or more resiliently deformable members, the movable locking member being arranged and configured to move, in use, between a **first position** in which it exerts little or no pressure on said one or more resiliently deformable members, and a **second position** in which a generally radial force is exerted thereby on said one or more resiliently deformable members such that said one or more resiliently deformable members exert a corresponding centering force on said inner rim of said substantially central aperture of said information medium. As will be described in greater detail below, the second (locking) position is largely achieved via a combination of **mechanical and magnetic means**. That is, the clamping member includes magnetic means that attracts a corresponding ferrous portion of the movable locking member. This causes the movable locking member to move upwards in a vertical direction causing a sliding cam, which is integrally formed with the movable locking member to impinge the resiliently deformable members to exert a friction force to improve centering performance at high speeds.

The apparatus of the invention preferably comprises a fitting member for receiving the information medium via a substantially central aperture thereof, one or more resiliently deformable members located adjacent the inner rim of said substantially central aperture, when an information medium is loaded on the turntable, and a **movable locking member** referred to above. The fitting member may comprise a stationary portion, for example, a substantially annular yoke, at least a portion of which is beneficially formed of a ferrous

metal. The movable locking member is preferably provided on a movable yoke, **at least a portion of which is formed of a ferrous metal**, a sliding cam being formed thereon, or integrally therewith, which sliding cam is cooperatively arranged relative to the one or more resiliently deformable members. The movable locking member is preferably arranged to move in a generally vertical direction relative to the plane of an information medium, when in use. The turntable beneficially comprises a disc setting surface for receiving an information medium, the disc setting surface preferably having a peripheral friction sheet thereon. The one or more resiliently deformable members beneficially extend upwardly from a lip portion located radially inwardly from the circumference of the disc setting surface. The turntable beneficially comprises a clamping member including at least a portion, such as an annular circumferential edge, which presses down on an information medium, when in use, such that it abuts the friction sheet on the disc setting surface. The clamping member beneficially includes **at least one magnet means for attracting a corresponding ferrous portion of said movable locking member**, thereby to cause movement thereof, in use. The fitting member may also include **magnetic means for attracting the clamping member** and therefore increasing the pressure exerted thereby on the information medium, when in use.

Claim Rejections under 35 USC 102

Rejection of Claims 1-6 and 8-12

In the Office Action, Claims 1–6 and 8-12 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,862,120 (“Mukawa”). Claims 2-4 have been cancelled without prejudice or disclaimer. Applicants respectfully traverse the remainder of the rejections.

Claims 1-6 and 8-12 are allowable

Independent Claim 1 has been amended herein to better define Applicant’s invention over Mukawa. Claim 1 now recites limitations and/or features which are not disclosed by Mukawa. Therefore, the cited portions of Mukawa do not anticipate claim 1, because the cited portions of Mukawa do not teach every element of claim 1. For example, the cited portions of Mukawa do not disclose or suggest,

Apparatus for centering an information medium (101) on a turntable, the apparatus comprising:

.... a movable locking member (40) provided on the movable metal yoke at least a portion of which is formed of a ferrous material, the movable locking member (40) being cooperatively arranged relative to said plurality of resiliently deformable members (12); the movable locking member (40) including a sliding cam (40a), formed thereon, or integrally therewith, and is cooperatively arranged relative to the one or more resiliently deformable members (12), wherein said movable locking member(40)is arranged and configured to move, in a generally vertical direction, between a first position in which it exerts little or no pressure on said one or more resiliently deformable members (12) and a second position in which a generally radial force is exerted thereby on said one or more resiliently deformable members (12) such that said one or more resiliently deformable members (12) exert a corresponding centering force on said inner rim of said substantially central aperture (102) of said information medium (101), and

... a clamping member (15) having an annular circumferential edge (23) for pressing down on the information medium (101) to cause the information medium (101) to abut the peripheral friction sheet (19) on the disc setting surface (3), the clamping member (15) defining an inner recess for receiving the fitting member (4), when the information medium (101) is loaded on the turntable, an upper wall of which inner recess is provided with a magnetic means (48) for attracting the ferrous portion of the movable locking member (40) causing said movable locking member (40) to move from said first position to said second position, as recited in claim 1. [Emphasis Added]

In contrast to claim 1, the cited portions of Mukawa disclose a disc table employed in a disc recording/reproducing apparatus having a recording medium, a recording disc, such as an optical disc or a magneto-optical disc, on which information signals are pre-recorded or are to be recorded. The disc table includes a **fitting member** fitted from its distal end into a circular center aperture of the recording disc. The end face of the fitting member 4 is formed with a magnet mounting recess 13 which is a circular recess concentric with the fitting member 4. A magnet 9 for thrusting and supporting the recording disc 101 with respect to the table section 2 is fitted in the mounting recess 13. See Mukawa, Abstract. However, the cited

portions of Mukawa fail to disclose or suggest, a movable locking member (40) provided on the movable metal yoke at least a portion of which is formed of a ferrous material and a clamping member (15) defining an inner recess for receiving the fitting member (4), when the information medium (101) is loaded on the turntable, an upper wall of which inner recess is provided with a magnetic means (48) for attracting a ferrous portion of the movable locking member (40) causing the movable locking member (40) to move from a first position to a second position, as recited in claim 1.

In accordance with the operation of the apparatus of the invention, in a rest position, as illustrated in Fig. 4 of Applicant's drawings, there is shown to be no contact between the sliding cam 40a and the fingers 12, thereby allowing an optical data storage disc to be positioned on the turntable friction ring 19 while the finger force is minimal. During loading of a disc media onto the turntable, after a disc 101 has been positioned on the turntable friction ring 19, the clamping member 15 is lowered and attracted towards the turntable by the stationary metal yoke 4 at the outer circumference of the fitting member 4, following which the motor turntable and the disc 101 will be lifted up towards the clamping member 15, such that the disc 101 rests in the preferred centre position. As the air gap between the magnet 48 on the clamping member 15 and the movable yoke 40 decreases, the movable metal yoke 40 (including the movable locking member 40) will be lifted in the direction denoted by D in Fig. 5. The sliding cam 40a is (magnetically) attracted toward the clamper magnet 48. The movable metal yoke including the movable locking member (40) is cooperatively arranged relative to the plurality of resiliently deformable members (12). The movable locking member (40) includes a **sliding cam (40a)** formed thereon. The sliding cam 40a provides a locking effect on the fingers 12, thereby improving the centering force thereof.

Mukawa does not disclose or suggest the use of a movable metal yoke 40 including a movable locking member 40 cooperatively arranged relative to the plurality of resiliently deformable members (12) to effect a locking force on the resiliently deformable members.

Mukawa discloses an outer periphery of the fitting member being tapered and upwardly biased, so that when the recording disc is set on the table section, with the rim of the center aperture thereof in sliding contact with the outer periphery of the fitting member, the

rim of the center aperture of the recording medium is thrust by the outer periphery of the fitting member to effect centering of the recording disc with respect to the driving shaft. Mukawa discloses in one embodiment, **a plurality of clamping members 19** provided as thrusting and supporting means, as shown in FIGS. 10 to 15. The clamping members 19 are described in Mukawa as being formed as a substantially T-shaped member having arms extending in two opposite directions from the mid-part provided with the shaft inserting hole 20 and a third arm extending in a direction substantially normal to these two arms. One of the two arms of the clamping member 19 extending in the two opposite directions functions as the clamping section 23, while the third arm extending in the direction substantially normal to the clamping section 23 functions as a thrust section 22. Between each clamping member 19 and the table section 2, a torsion coil spring 18 is used for rotationally biasing the clamping member 19 in a direction away from a neutral rotational position of the clamping member 19. It should be understood that the clamping member 19 of Mukawa cannot translate in a vertical direction, as taught by the invention. The plurality of pivotal clamping members cannot translate vertically because each are each supported on a hub so as to be pivotal about an axis which is tangential with respect to a circle having an axis about which said hub is rotatable, as a center. A plurality of spring members each associated with one of the plurality of clamping members, are arranged to produce a toggle effect which allows said clamping members to be biased to a first angular position until rotated by a predetermined amount and then biased to a second angular position.

The clamping members of Mukawa are responsive to the disc being placed on said hub in a manner wherein the lower surface of the disc engages the first surface of each clamping member and in response to a bias force on the disc rotates the clamping members by the predetermined amount whereafter the spring members bias the clamping members to rotate toward their respective second angular positions and so that the second surfaces of said clamping members engage the upper surface of said disc and bias said disc down toward said table section with a force which is sufficient to deflect centering means inwardly with respect to said hub.

Applicant therefore respectfully submit that the clamping members taught in Mukawa operate in an entirely different manner than the invention which teaches the use of a movable

metal yoke 40 including a movable locking member 40 cooperatively arranged relative to the plurality of resiliently deformable members (12) to effect a locking force on the resiliently deformable members. Hence, claim 1 is allowable.

Claims 5-6 and 8-12 depend from independent Claim 1 and therefore contains the limitations of Claim 1 and is believed to be in condition for allowance for at least the same reasons given for Claim 1 above. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b) and allowance of Claims 5-6 and 8-12 is respectfully requested.

Claim 7 is allowable

In the Office Action, Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Mukawa in view of U.S. Patent Application Publication No. 2006/0184957 (“Koshino”). Applicant respectfully traverses the rejection.

As explained above, the cited portions of Mukawa do not disclose or suggest each and every element of claim 1 from which claim 7 depends. Koshino does not disclose each of the elements of claim 1 that are not disclosed by Mukawa. Koshino is merely cited by the Office for disclosing a peripheral friction sheet.

Thus, the cited portions of Mukawa and Koshino, individually or in combination, do not disclose or suggest does not disclose or suggest each and every element of claim 1. Hence claim 1 is allowable and claim 7 is allowable, at least by virtue of its respective dependence from claim 1.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1 and 5-12 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-945-6000.

Respectfully submitted,



Michael A. Scaturro
Reg. No. 51,356
Attorney for Applicant

Mailing Address:
Intellectual Property Counsel
Philips Electronics North America Corp.
P.O. Box 3001
345 Scarborough Road
Briarcliff Manor, New York 10510-8001